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If any apology be neceſſary for calling the attention of the ſociety to a queſtion ſo long agitated, it will be found in a deſire to prove the accuracy of the New Teſtament hiſtory. Every thing that has this effect I truſt will be well received.

Cambridge, *January* 10, 1800.

Deſcription of a New INVENTED STEELYARD, *by* BENJAMIN DEARBORN, F.A.A.

Boſton, *May* 29, 1792.

SIR,

THE Steelyard ſent herewith was deſigned to correct the errors of fraud and accident, to which thoſe of the common kind are ever liable. By placing the centre of motion above the centre of gravity, and by bringing the points of ſuſpenſion upon a line with the centre of motion, the beam vibrates either with or without the article weighed, like a ſcalebeam, if balanced by equal weight of the ends. This prevents the deceptive appearance of an equipoiſe by dexterity of hand. Dexterity will no more affect this ſteelyard than a well adjuſted ſcalebeam. The reaſon will appear by the figure. The centre of motion in the *common ſteelyard* is D, Plat. I. fig. 4th. The points of ſuſpenſion C and E. While the beam is in a horizontal poſition, the points are at equal horizontal diſtances from the centre; but the moment this poſition is changed, one point recedes from, and the other approaches the centre in horizontal diſtance,

diſtance, until the point C is brought down to A, its greateſt diſtance; and when brought down to B, the beam being at an angle of 45,° the points of ſuſpenſion are at the very unequal diſtances of D H, and D G; the point E being raiſed to F. No further demonſtration can be neceſſary to prove that accuracy cannot be a characteriſtic of the common ſteelyard.

The ſteelyard accompanying this, by having its centre of motion at F, Plat. I. fig. 5th, on the line of the points of ſuſpenſion, reduces their horizontal diſtances in reciprocal ratio upon every motion of the beam, and thereby preſerves to each power its reſpective effect in every poſition; as at an angle of 45° the diſtances are the equal lines K L and M N. To prevent inaccuracy by diſproportionate diſtances between the fulcrum of the lever and the two powers, two poizes attend the ſteelyard, for hanging on one or both, as the object to be weighed may require; theſe poizes are adjuſted to certain weights, one being the multiple of the other, and each ſide of the beam is marked and numbered for one of the poizes, the weight of which is ſtamped on its reſpective ſide of the beam, accompanied with the letter P. The poizes being adjuſted to certain weights, become cognizable by the public ſealer of weights and meaſures, and are equally uſeful in ſcales, as any other kind of weights.

I am, very reſpectfully
Sir, your humble ſervant,
BENJAMIN DEARBORN.

The Preſident of the American Academy of Arts and Sciences.